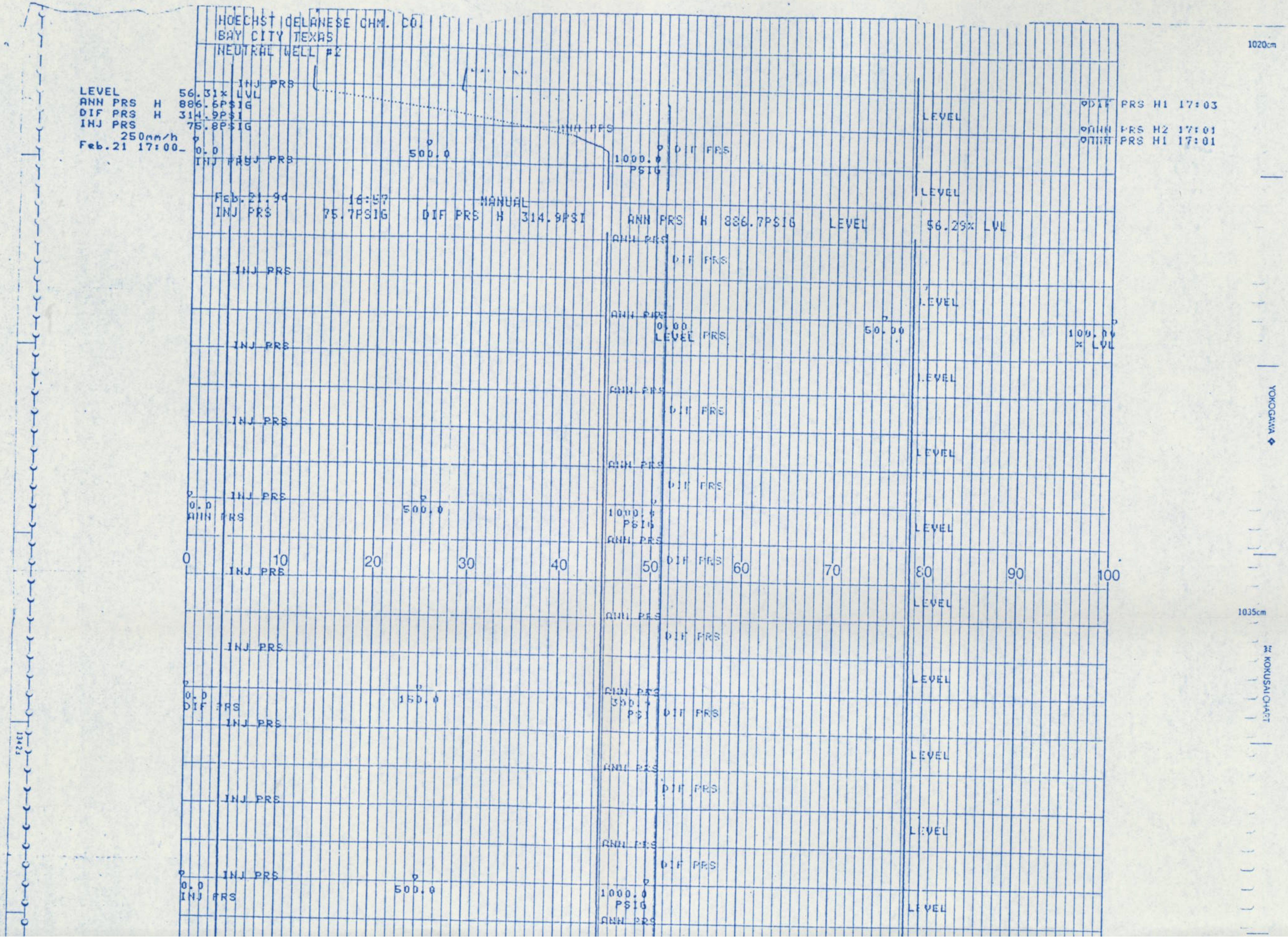
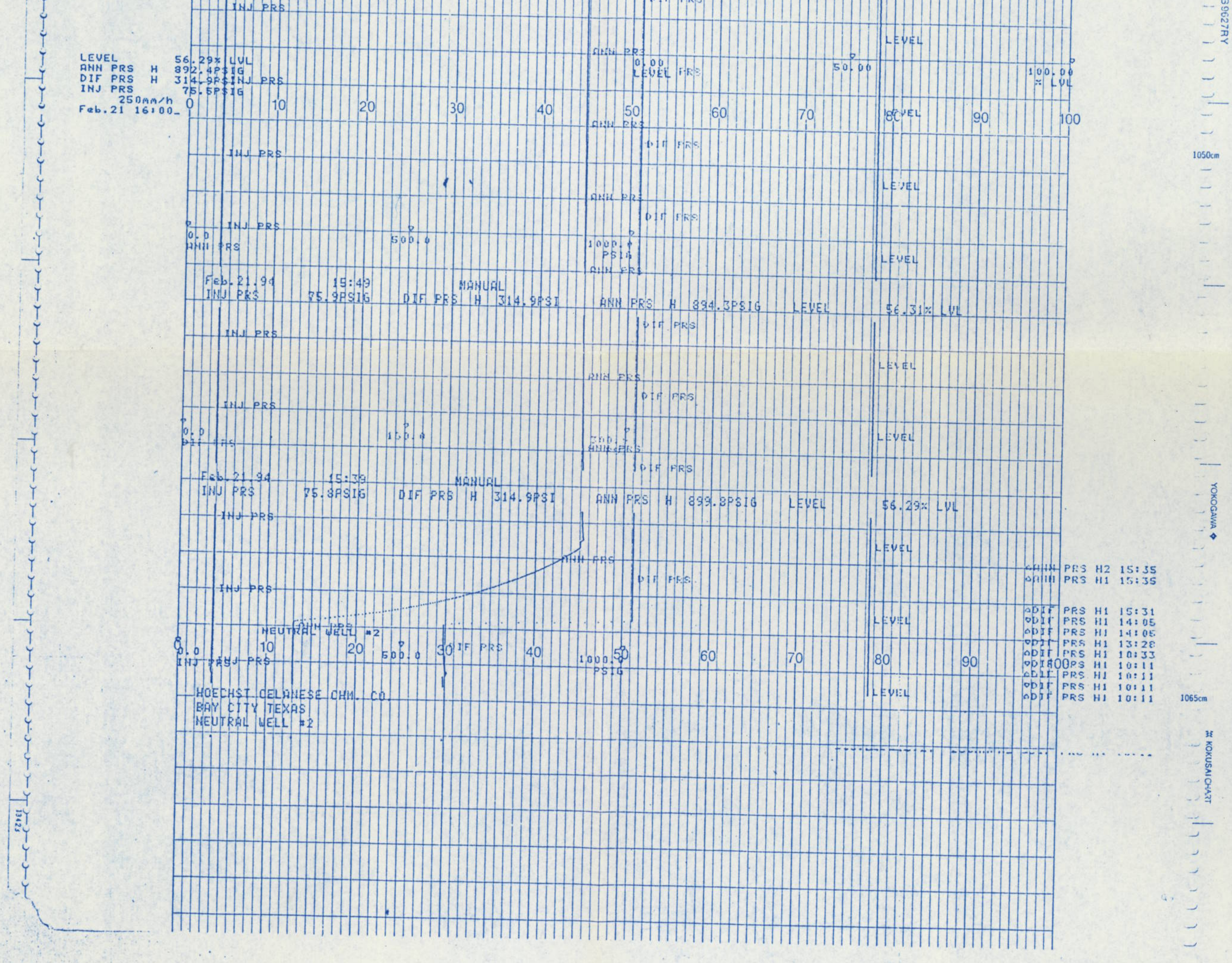
ECO Solutions, Inc.
Hoechst Celanese Chemical Group, Inc.
Pressure Falloff/MIT Testing

APPENDIX H

ANNULUS PRESSURE TEST


HOECHST CELANESE CHM. CO.
BAY CITY TEXAS
NEUTRAL WELL #2
LEVEL 56.31% LVL
ANN PRS H 886.6PSIG
DIF PRS H 314.9PSI
INJ PRS 75.8PSIG
250mm/h
Feb.21 17:00
Feb.21.94 16:57 MANUAL
INJ PRS 75.7PSIG DIF PRS H 314.9PSI ANN PRS H 886.7PSIG LEVEL 56.29% LVL
DIF PRS H1 17:03
ANN PRS H2 17:01
ANN PRS H1 17:01
0.0 INJ PRS
500.0
1000.0 PSIG
0.0 ANN PRS
0.0 DIF PRS
150.0
300.0 PSI
0.00 LEVEL
50.00
100.00 % LVL
INJ PRS
ANN PRS
DIF PRS
LEVEL
0
10
20
30
40
50
60
70
80
90
100
1020cm
1035cm
YOKOGAWA
KOKUSAI CHART


LEVEL 56.29% LVL
ANN PRS H 892.4PSIG
DIF PRS H 314.9PSI
INJ PRS 75.6PSIG
250mm/h
Feb.21 16:00
Feb.21.94 15:49
INJ PRS 75.9PSIG DIF PRS H 314.9PSI ANN PRS H 894.3PSIG LEVEL 56.31% LVL
MANUAL
Feb.21.94 15:39
INJ PRS 75.8PSIG DIF PRS H 314.9PSI ANN PRS H 899.8PSIG LEVEL 56.29% LVL
MANUAL
HOECHST CELANESE CHM. CO.
BAY CITY TEXAS
NEUTRAL WELL #2
ANN PRS H2 15:35
ANN PRS H1 15:35
DIF PRS H1 15:31
DIF PRS H1 14:05
DIF PRS H1 14:05
DIF PRS H1 13:28
DIF PRS H1 10:33
DIF PRS H1 10:11
DIF PRS H1 10:11
DIF PRS H1 10:11
DIF PRS H1 10:11
1050cm
1065cm
YOKOGAWA
KOKUSAI CHART

APPENDIX I

CORRESPONDENCE

94-004

Hoechst Celanese

Chemical Group
Hoechst Celanese Corporation
Bay City Plant
PO Box 509
Highway 3057
Bay City, TX 77404-0509

January 7, 1994
IOC-002-94

CERTIFIED MAIL

Mr. Mike Mishra
Underground Injection Control Unit
Texas Natural Resource Conservation Commission
P. O. Box 13087
1700 North Congress Avenue
Austin, TX 78711-3087

Subject: Revised (January 7, 1994) Proposed Mechanical Integrity Testing Procedures and Additional Information
WDW-14 and WDW-110
Hoechst Celanese Chemical Group, Inc.
Bay City Plant, Bay City, Texas
(Reference Letter, IOC-097-93,
(dated December 7, 1993)

Dear Mr. Mishra:

Pursuant to your telephone request on Wednesday, January 5, 1994, please find included with this transmittal the following:

Addendum I - Detailed mechanical integrity test procedures and well schematic for WDW-14,

Addendum II - Detailed mechanical integrity test procedures and well schematic for WDW-110,

Addendum III - Bottom hole pressure falloff procedure for both WDW-14 and WDW-110, and

Addendum IV - Revised bottom hole pressure falloff schedule for both WDW-14 and WDW-110.

If you have any questions, contact me at (409) 241-4197.

Respectfully,

I. O. Coleman, Jr.
I. O. Coleman, Jr.
Environmental Section Leader

IOC/cjs
attachments

Hoechst

cc:

Mr. Larry Walker, Geologist
UIC Team
UIC, Uranium and Radioactive Waste Section
Industrial and Hazardous Waste Division
Texas Natural Resource Conservation Commission
P. O. Box 13087
1700 North Congress Avenue
Austin, TX 78711-3087

Mr. Chuck Green
Texas Natural Resource Conservation Commission
P. O. Box 13087
Austin, TX 78711-3087

Mr. Phil Dellinger, USEPA Region VI
Environmental Protection Agency, Region VI
Emergency Response Branch (6E-E)
1445 Ross Ave.
Dallas, Tx 75202-2733

Mr. Tom Jones, ECO
ECO Solutions
10333 Richmond Avenue
Suite 250
Houston, TX 77042

Mr. Bob Hall, ECO
ECO Solutions
10333 Richmond Avenue
Suite 250
Houston, TX 77042

PROPOSED PROCEDURES TO DEMONSTRATE
MECHANICAL INTEGRITY TESTING
HOECHST CELANESE - CHEMICAL GROUP
WDW-14
BAY CITY FACILITY

The following step-by-step proposed mechanical integrity testing (MIT) procedures were developed in accordance with the Underground Injection Control (UIC) and the Hazardous Waste Disposal Injection Restrictions (HWDIR) Programs issued by the United States Environmental Protection Agency (US EPA) and promulgated by the Texas Natural Resources Conservation Commission (TNRCC). Except where noted, all steps of this procedure will be performed by ECO Solutions Inc. (ECO) personnel.

1) **Request and secure approval from the TNRCC to demonstrate MIT (HCCG & ECO).**

   * Define annulus pressure test, type logging tools and downhole logging procedures and submit to HCCG .

   * HCCG will draft a letter which will provide formal notification to the TNRCC of the intent to demonstrate MIT.

   * HCCG will issue the letter to the TNRCC for review and acceptance.

   * Receive approval letter from TNRCC on proposed MIT.

2) **Notify the TNRCC field inspector of the scheduled MIT (HCCG).**

   * Verbally notify the field inspector of the date field work is scheduled and the estimated starting time for the first test to be witnessed by the TNRCC.

   * Determine the intent of TNRCC to field witness MIT.

   * Determine desire of TNRCC for any special documentation of test results.

3) **Prepare well for MIT (HCCG).**

* Test master valve to make sure that it will open, close and seal off properly.

* Check wellhead valves to insure that standard fittings can be installed during the MIT. ECO requests that a 2" NPT connection, or standard oil field size adapter, be available on the tubing and casing outlets.

* HCCG's personnel will be set-up to maintain proper annulus pressure while conducting the radioactive tracer (RAT) survey.

* Close well in 48 hours prior to performing annulus pressure test/temperature survey.

4) **Perform annulus pressure test.**

* Install calibrated pressure gauge onto the annulus. Also, HCCG will furnish and install a pressure recorder.

* HCCG's personnel will slowly pressurize the annulus using nitrogen gas to +/- 800 psig. The annulus is reportedly filled with inhibited brine.

* Monitor casing pressure for a minimum period of 60 minutes. Maximum allowable pressure leak-off rate during test is 5% of maximum test pressure.

* Gradually bleed off annulus pressure to normal operating level.

5) **Run temperatue survey and radioactive tracer (RAT) survey.**

* Rig up electrical wireline service unit including two gamma ray (G/R) detectors, casing collar locator (CCL) and radioactive tracer (RAT) ejector tool and temperature tools.. Ejector containes +/-5 millicuries of Iodine 131 radioactive (R/A) solution.

* Run temperature survey from surface to either the top of fill or plug back total depth.

* Run initial base G/R log from just below perforated section up to +/-300' above the packer (@3162'), or up to +/-2800. Make repeat G/R run in cased section to prove G/R tool repeatability.

* Run one (1) five-minute statistical log at a depth of 3340'.

* Commence pumping non hazardous effluent fluid down tubing using HCCG's injection pumps at a steady rate.

* Release first R/A slug inside tubing at +/-2800' while pumping fluid down the tubing at the rate of +/-40 gpm. Make multiple recorded passes following the R/A slug (1) down the tubing, (2) into the borehole and (3) into the disposal zone until the R/A slug virtually disappears and cannot be distinguished from the normal background G/R radioactivity.

* Release second R/A slug. Repeat multiple pass survey above.

* Release third R/A slug from tool at +/-3340'. Hold tool stationary with a pump rate of approximately 100 gpm. Place recorder on time-drive sequence. Logging time will be predetermined based on actual injection rate and as agreed upon with the TNRCC inspector.

* Release fourth R/A slug from tool at +/-3340. Repeat stationary survey above.

* Run final base G/R from just below base of perforated section up to +/-2800' (same interval as original base G/R log) to verify that all R/A materials have been flushed into the disposal zone and that no fluid is migrating up behind the casing strings. Pull tool out of the hole.

6) **MIT field work is completed.**

* Rig down all rental equipment and either move to the next injection well or off the location.

7) **Submit MIT report (HCCG & ECO).**

* Prepare a draft MIT report detailing the demonstration of MIT on WDW No. 14.

* Submit draft report to HCCG for comments and approval (ECO).

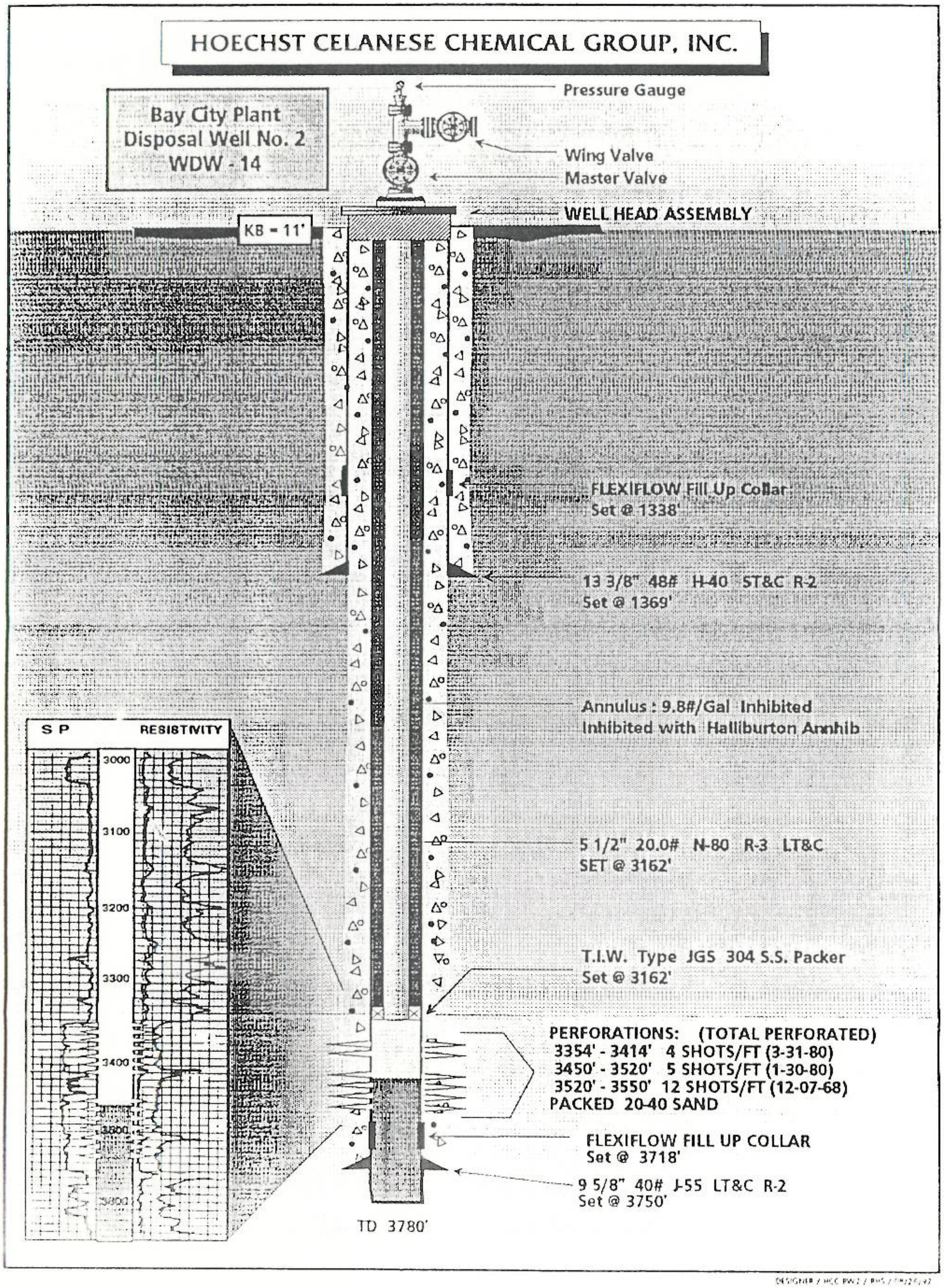
* ECO will correct the MIT report as required and issue 5 copies of the final report to HCCG.

* HCCG will submit report to the TNRCC for review and approval.

* HCCG will receive TNRCC's acceptance of the MIT report.

8) **Mechanical Integrity Testing Complete.**

FIGURE 7.1


HOECHST CELANESE CHEMICAL GROUP, INC.
Bay City Plant
Disposal Well No. 2
WDW - 14
Pressure Gauge
Wing Valve
Master Valve
WELL HEAD ASSEMBLY
KB = 11'
FLEXIFLOW Fill Up Collar
Set @ 1338'
13 3/8" 48# H-40 ST&C R-2
Set @ 1369'
Annulus : 9.8#/Gal Inhibited
Inhibited with Halliburton Annhib
5 1/2" 20.0# N-80 R-3 LT&C
SET @ 3162'
T.I.W. Type JGS 304 S.S. Packer
Set @ 3162'
PERFORATIONS: (TOTAL PERFORATED)
3354' - 3414' 4 SHOTS/FT (3-31-80)
3450' - 3520' 5 SHOTS/FT (1-30-80)
3520' - 3550' 12 SHOTS/FT (12-07-68)
PACKED 20-40 SAND
FLEXIFLOW FILL UP COLLAR
Set @ 3718'
9 5/8" 40# J-55 LT&C R-2
Set @ 3750'
TD 3780'
S P
RESISTIVITY
3000
3100
3200
3300
3400
3500
3600

BOTTOM HOLE PRESSURE FALLOFF TESTING
WDW NOS. 14 & 110

HOECHST CELANESE - CHEMICAL GROUP
BAY CITY, TEXAS

Prepared by ECO Solutions

The following is an overview of the proposed bottom hole pressure falloff test procedures for WDW-14 and WDW-110. The falloff test procedures feature the shutting-in of adjacent, onsite, injection wells prior to conducting each falloff test.

Effluent samples will be taken prior to and during each falloff test. Specific gravity and viscosity measurements will be taken on each sample at simulated bottom hole temperature.

ECO Solutions will provide an engineer on-site with the appropriate computer software for analysis of each falloff test.

1) WDW-49 will remain brined in while conducting bottom hole pressure falloff testing on WDW-14 and WDW-110.

2) Maintain high constant injection rates on WDW-14 for approximately four (4) days prior to conducting falloff test on same.

3) Approximately 48 hours prior to conducting bottom hole pressure testing on WDW-14, shut-in WDW-110 and WDW-32.

4) Install surface readout bottom hole pressure gauges in WDW-14 and monitor/record flowing bottom hole pressure for approximately 24 hours.

5) Conduct bottom hole pressure falloff test on WDW-14.

6) Place WDW-14, WDW-32 and WDW-49 back in service for approximately one week prior to conducting falloff testing on WDW-110.

7) Maintain high constant injection rates on WDW-110 for approximately four (4) days prior to conducting falloff test on same.

8) Approximately 48 hours prior to conducting bottom hole pressure testing on WDW-110, shut-in WDW-14 and WDW-32.

9) Install surface readout bottom hole pressure gauges in WDW-110 and monitor/record flowing bottom hole pressure for approximately 24 hours.

10) Conduct bottom hole pressure falloff test on WDW-110.

11) Place all wells back in service.

12) Prepare and submit report detailing field activities to Texas Natural Resources Conservation Commission

Interoffice Memo

Hoechst Celanese

Date: October 13, 1992

GMQ-621-92

To: H. R. Horton

From: G. M. Quinney

Dept/Location: Maintenance Engineering

Dept/Location: Maintenance

Subject: Well Instrumentation

The well instrumentation for #2, #3 and #4 wells at the Bay City Plant is the Honeywell ST 3000. Its accuracy is ± .1% of full span in the analog mode. The ST 3000 transmitter is calibrated via the Smart Field Communication Model STS 102.

G. M. Quinney

G.M. Quinney

Condensed Specifications

Output

Linear or square root
- Analog Mode: 4-20 mA dc
- Digital Mode: DE protocol
  - Analog or digital mode selectable by SFC

Accuracy (Reference)

Analog Mode: ±0.1% span
Digital Mode: ±0.075% span or ±0.15% reading, whichever is smaller

Combined zero and span temperature effect per 28°C (50°F)

Analog Mode: ±0.175% span
Digital Mode: ±0.125% reading

Combined zero and span static pressure effect per 70 bar (1000 psi)– DP models only

Analog Mode: ±0.2% span
Digital Mode: ±0.2% reading

Ambient temperature limits

–40° to +93°C (–40° to +200°F)

Meter body temperature limits

–40° to +125°C (–40° to +257°F)

Damping

Adjustable from 0–32 seconds

Overpressure

210 bar (3000 psi) for DP models;
1.5 X upper range limit for GP models

Supply voltage

11 to 45 Vdc

ST 3000 Transmitter Ranges		
Measurement	**Model**	**Min-Max Span**
Differential Pressure	STD 120 STD 125* STD 130 STD 170 STD 624	1–400 in H_2O 25–600 in H_2O 5–100 psi 100–3000 psi 25–400 in H_2O
Flange Mount	STF 128 STF 132 STF 12F STF 13F STD 14F* STF 62F	10–400 in H_2O 5–100 psi 1–400 in H_2O 5–100 psi 25–600 in H_2O 25 400 in H_2O
Remote Seal	STR 126 STR 130	10–400 in H_2O 5–100 psi
Gage Pressure	STG 140 STG 170 STG 180 STG 644 STG 674	5–500 psi 100–3000 psi 100–6000 psi 5–500 psi 100–3000 psi
Absolute Pressure	STA 122 STA 140	10–780 mmHg 5–500 psi

*HTG

Honeywell

Helping You Control Your World

Industrial Automation and Control
Honeywell Inc.
1100 Virginia Drive
Fort Washington, PA 19034

34-ST-58-16 R (10M) 7/91 ©Honeywell Inc. Printed in U.S.A.

Honeywell

SFC Smart Field Communicator
Model STS102

Specification

Function
The hand-held SFC Smart Field Communicator is a battery-powered device which establishes two-way communication between Honeywell Smart Transmitters and an operator over the existing transmitter signal lines, thereby simplifying maintenance and providing operator access to transmitters without a trip to the field. The operator can send data to and receive data from the transmitter's microprocessor, through the SFC, when connected to the transmitter signal lines at any accessible location from the control room to the transmitter. The SFC is in an impact resistant housing and comes with a weather-proof carrying case, a NiCad rechargeable battery pack, and a dc recharger.

Description
Model STS102 is capable of communicating with ST 3000 differential pressure, gauge pressure and absolute pressure transmitters, with the STT 3000 Smart Temperature Transmitter, with the Smart MagneW 3000 Magnetic Flowmeter and with future additions to the Honeywell Smart Field Architecture.

You can use the SFC to:

Select the Communication Mode: Command the transmitter to transmit its output signal in either an analog (4-20 mA) mode or in the Digital Communications (DE) Mode.

Configure: Enter the desired operating parameters (LRV, URV, damping, fail-safe mode, input actuation type for STT, etc) into the transmitter.

Diagnose: Access the Smart Transmitter self-diagnostic capabilities to troubleshoot suspected operation or communication problems.

Calibrate: The SFC provides a simplified procedure for calibrating Smart Transmitters, thus maintaining excellent transmitter accuracy with significantly reduced maintenance requirements. Note that Honeywell Smart Transmitters can be re-ranged from a remote location without the need to apply input signals from calibration standards.

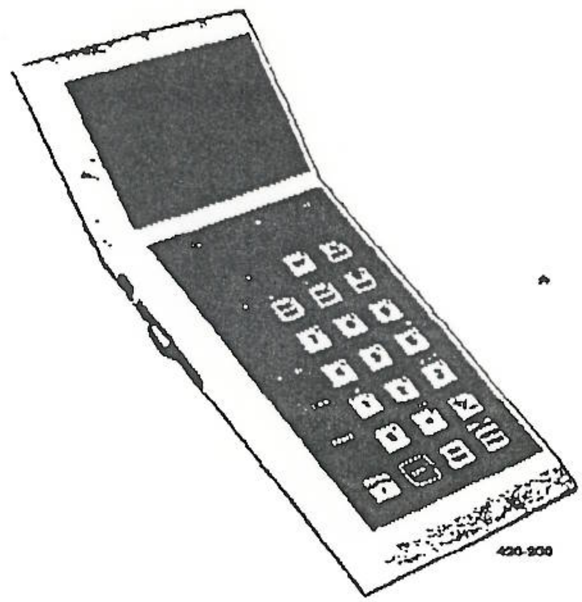


Figure 1—SFC Smart Field Communicator

Display: Readout all configured operating parameters from the transmitter as well as other data such as PROM/Serial No., tag no. sensor temperature (ST), hi/lo PV (STT), scratch pad memory (ST), etc. Also displays measured input values (pressure, differential pressure, temperature, flow velocity) in selected engineering units for readout by the operator. All readouts can be displayed in English, German, French or Spanish.

Checkout: Put the transmitter in the Output Mode and you can command the Smart Transmitter to transmit a precise signal, selectable from 0% to 100% full scale, to assist in verifying loop operation, loop calibration or troubleshooting.

Interoffice Memo

Hoechst Celanese

Date February 21, 1994 JMK-074-94

To Ray H. Horton From J. M. Knobeloch

Dept/Location Maintaince Eng. Dept/Location: Laboratory

Subject Analysis of #2 Well (WDW-14) Feed For Mechanical Integrity Testing

cc: W. C. Cornman, G. E. Organ, R. S. O'Neal, N. C. Stafford, E. H. Chiu, B. A. Logue, B. L. Fritz, J. L. Popejoy, C. M. Grey

Samples collected by Area 1 operators were analyzed for specific gravity and viscosity at a temperature of 120 F. The analyses below were preformed by Clark M. Grey.

Sample Date	Time	Specific Gravity	Viscosity (cps)
2-14-94	8 AM	0.9943	1.55
2-14-94	3 PM	0.9949	1.51
2-15-94	2 AM	0.9950	1.44
2-15-94	7 AM	0.9950	1.53
2-15-94	3 PM	0.9943	1.46
2-16-94	7 AM	0.9946	1.50
2-16-94	11 PM	0.9946	1.44
2-17-94 *	7 AM *	0.9990	1.70
2-17-94	7 AM	0.9946	1.44
2-17-94	3 PM	0.9946	1.49
2-17-94	11 PM	0.9948	1.49

* Note: There were two samples labeled 7 AM on 2-17-94, I called Control Room 7 and talked to Jerry West to find out when the operator who signed the sample tag was working. The operator who signed the tag was not at work on the 17th. I am not sure where the sample fits into the scheme of things.

If any additional information is required please call me.

John M. Knobeloch

John M. Knobeloch

VISCOSITY of LIQUIDS

This method discribes the measurement of the viscosity of a liquid using a Cannon-Fenske viscometer. This method is applicable over a broad range of temperatures. For a in depth discussion of viscosity see (Technique of Organic Chemistry Volume I - Part I "Physical Methods of Organic Chemistry". Third Edition, Interscience Publishers, New York 1959 pages 703-705). In order to find the viscosity you will need to obtain a factor for the apparatus, actual measurements of your sample, and the density of your sample.

1) Set an iso-thermal bath to the temperature at which you wish to measure the viscosity and let it equilibriate.

2) Fill the reservoir of the Cannon-Fenske viscometer half full of nanopure water. Submerse this viscometer until almost all of it is under the water in the iso-thermal bath. Give the viscometer 10-15 minutes to equilibriate.

3) Use a pipet bulb to pull the water into the top bulb of the two smaller bulbs of the viscometer. Remove the bulb and replace with your finger to hold the liquid in place.

4) Release the liquid by removing your finger. Time using a stop watch the time it takes the meniscus to travel starting from when the meniscus touches the line between the two small bulbs to when it touches the line below the lower of the two small bulbs. (Repeat this 3 times and take the average)

5) Look up in a reputable hand book such as the CRC Handbook of Chemistry and Physics the viscosity (in cps) of water at the temperature you are running at. (see attached page)

6) Calculate the factor for the Cannon-Fenske viscometer using the equation below.

Factor= Viscosity of water at Temperature (cps)/ Time (sec)

After you have found a factor for the viscometer you are ready to start testing on your sample.

7) Remove the water from the viscometer and dry.

8) Follow the instructions listed above starting with #2 going through #4 using the same procedure except that you will be using your sample instead of water.

9) Obtain the density (g per ml) of the sample you are running at the same temperature it is tested at.

Viscosity = (Time in sec) X (Factor) X (Density in g per ml)

This equation will give you viscosity in centipoise (cps)

THE VISCOSITY OF WATER 0°C TO 100°C

Contribution from the National Bureau of Standards not subject to copyright.

°C	η(cp)	°C	η(cp)	°C	η(cp)	°C	η(cp)
0	1.787	26	0.8705	52	0.5290	78	0.3638
1	1.728	27	.8513	53	.5204	79	.3592
2	1.671	28	.8327	54	.5121	80	.3547
3	1.618	29	.8148	55	.5040	81	.3503
4	1.567	30	.7975	56	.4961	82	.3460
5	1.519	31	.7808	57	.4884	83	.3418
6	1.472	32	.7647	58	.4809	84	.3377
7	1.428	33	.7491	59	.4736	85	.3337
8	1.386	34	.7340	60	.4665	86	.3297
9	1.346	35	.7194	61	.4596	87	.3259
10	1.307	36	.7052	62	.4528	88	.3221
11	1.271	37	.6915	63	.4462	89	.3184
12	1.235	38	.6783	64	.4398	90	.3147
13	1.202	39	.6654	65	.4335	91	.3111
14	1.169	40	.6529	66	.4273	92	.3076
15	1.139	41	.6408	67	.4213	93	.3042
16	1.109	42	.6291	68	.4155	94	.3008
17	1.081	43	.6178	69	.4098	95	.2975
18	1.053	44	.6067	70	.4042	96	.2942
19	1.027	45	.5960	71	.3987	97	.2911
20	1.002	46	.5856	72	.3934	98	.2879
21	0.9779	47	.5755	73	.3882	99	.2848
22	.9548	48	.5656	74	.3831	100	.2818
23	.9325	49	.5561	75	.3781		
24	.9111	50	.5468	76	.3732		
25	.8904	51	.5378	77	.3684		

The above table was calculated from the following empirical relationships derived from measurements in viscometers calibrated with water at 20°C (and one atmosphere), modified to agree with the currently accepted value for the viscosity at 20° of 1.002 cp:

$$0^\circ \text{ to } 20^\circ\text{C: } \log_{10}\eta_T = \frac{1301}{998.333 + 8.1855(T-20) + 0.00585(T-20)^2} - 3.30233$$

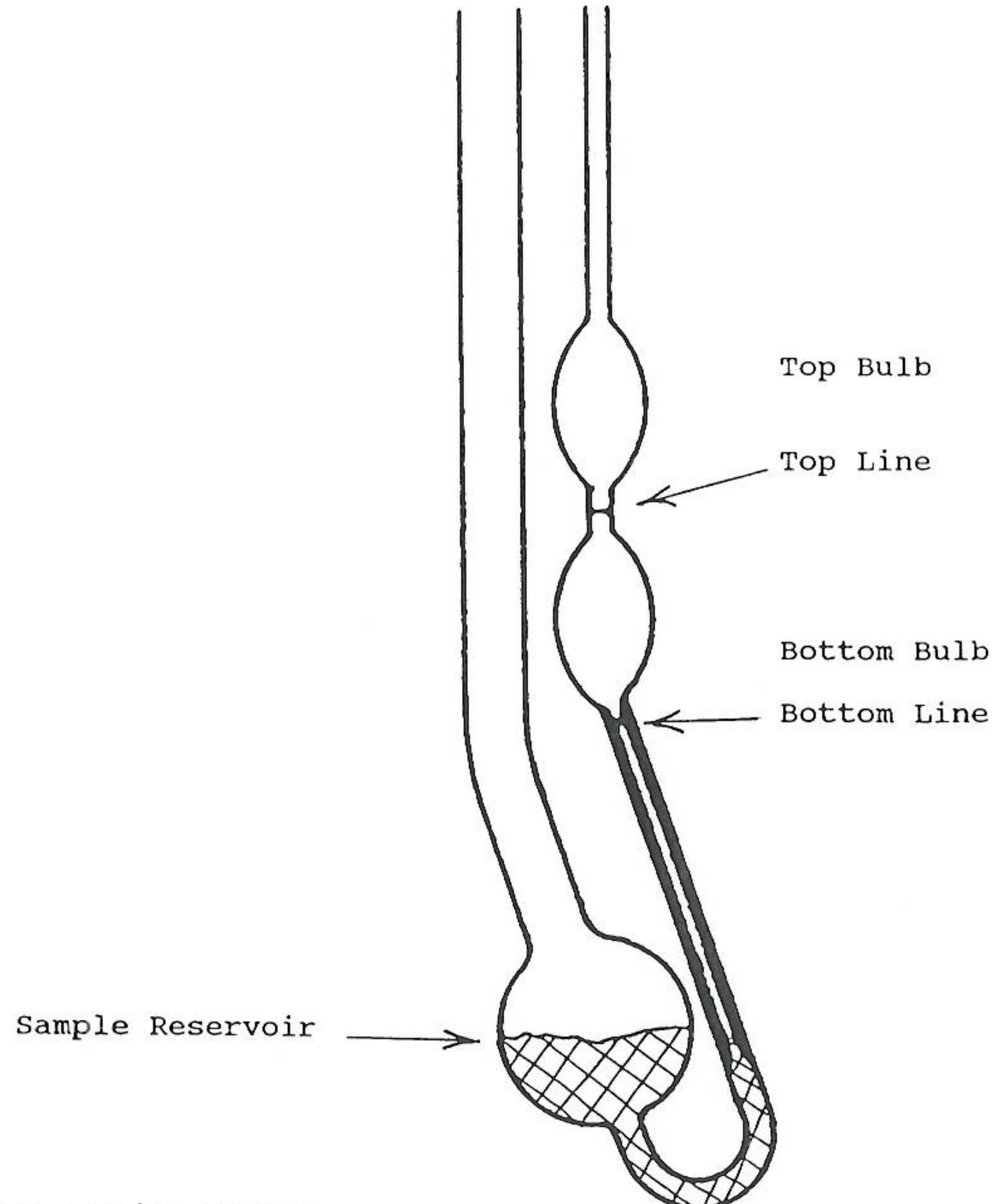
(R. C. Hardy and R. L. Cottington, J.Res.NBS *42*, 573 (1949).)

$$20^\circ \text{ to } 100^\circ\text{C: } \log_{10}\frac{\eta_T}{\eta_{20}} = \frac{1.3272(20-T) - 0.001053(T-20)^2}{T + 105}$$

(J. F. Swindells, NBS, unpublished results.)

from 53 Rd Edition 1972-1973
of CRC Handbook of
Chemistry & physics

CANNON-FENSKE VISCOMETER



conversion factor

Centipoise = Centistokes X Density

This method was put together March 31, 1994 by Clark M. Gray and John M. Knobeloch.

APPENDIX J

NOTICE OF FAILURE OF MECHANICAL INTEGRITY TEST

Chemical Group
Hoechst Celanese Corporation
Bay City Plant
PO Box 509
Highway 3057
Bay City TX 77404-0509

February 25, 1994
IOC-017-94

FEDERAL EXPRESS

Mr. Ben Knape, Head
Underground Injection Control Unit
Texas Natural Resource Conservation Commission (TNRCC)
P. O. Box 13087
1700 North Congress Avenue
Austin, Texas 78711-3087
AND
Park 35 Circle Colonnade Building
12015 North IH 35
Austin, Texas 78723

Subject: WDW-14 (Plant Injection Well No. 2)
WDW-49 (Plant Injection Well No. 4)
Hoechst Celanese Chemical Group, Inc.
Bay City Plant, Bay City, Texas
(Reference Letters, IOC-088-93 and IOC-096-93, Dated November 3, and December 4, 1993)

Dear Mr. Knape:

Firstly, this letter documents that our injection well, WDW-14, (Plant Well No. 2) did not successfully demonstrate mechanical integrity during the annual mechanical integrity testing the week of February 21, 1994. During the radioactive tracer logging, which was conducted on February 22-23rd., it was determined that a probable casing leak had developed at a depth of 3168 feet. This depth is immediately below the current packer setting depth and above the permitted injection interval. WDW-14 was immediately shut-in following the mechanical integrity testing and will remain shut-in pending development of an action plan to address the situation.

As you are aware, verbal notification of the loss of mechanical integrity was provided Mr. Larry Walker, Inspector, TNRCC, who was on location during the testing. Also, verbal notification of the loss of mechanical integrity of WDW-14 was provided to Mr. Phil Dellinger, Environmental Protection Agency, Dallas, Texas and to you on February 23, 1994. In addition, we communicated that the annulus pressure test and temperature log on WDW-14 were successfully completed.

Secondly, this letter documents our intent to proceed with workover on WDW-49 (Plant Well No. 4). Procedures (included with this letter as ADDENDUM I) associated with the replacement of the injection string were submitted to you in the above reference letter IOC-096-93. No changes to the procedures are proposed. However, we request TNRCC approval of the procedures for the workover to allow field operations to start late during the week of February 28, 1994. (A tentative start date of the workover is Thursday, March 3, 1994. It should be noted that this date may change as the coordination with equipment and suppliers is completed.

Please contact me by telephone at 409/241-4197 if you have comments or questions concerning the notification of loss of mechanical integrity of WDW-14 and our request to approve the workover procedures on WDW-49.

Very truly yours,

I. O. Coleman, Jr./cjs

I. O. Coleman, Jr.

IOC/cjs
attachment

Mr. Larry Walker, Geologist
UIC Team
UIC, uranium and Radioactive Waste Section
Industrial and Hazardous Waste Division
Texas Natural Resource Conservation Commission
P. O. Box 13087
1700 North Congress Avenue
Austin, TX 78711-3087

Mr. Chuck Green,
Texas Natural Resource Conservation Commission
P. O. Box 13087
Austin, TX 78711-3087

Mr. Phil Dellinger, USEPA Region VI
Environmental Protection Agency, Region VI
Emergency Response Branch (6E-E)
1445 Ross Ave.
Dallas, Tx 75202-2733

Mr. Tom Jones, ECO
ECO Solutions
10333 Richmond Avenue
Suite 250
Houston, TX 77042

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ADDENDUM I

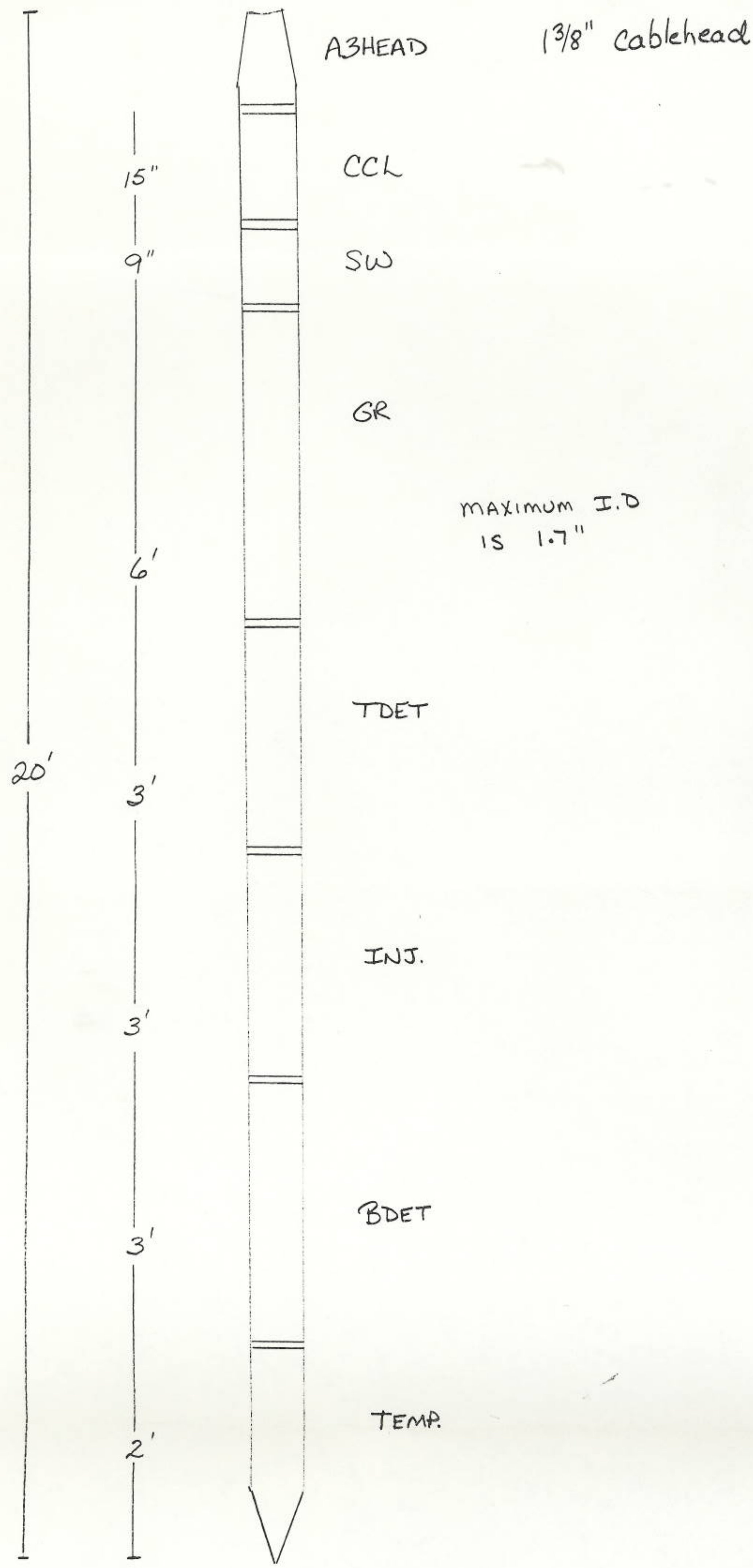
REPAIR PROCEDURES
HOECHST CELANESE BAY CITY PLANT
WELL NUMBER 4

The following plan was developed by Eco Solutions, Inc., to repair the leak in the injection tubing and satisfy five-year Mechanical Integrity Test requirements on Hoechst Celanese number 4 (WDW-49) injection well at Bay City, Texas. Please note that a temperature log was conducted on October 29, 1993.

1. Obtain approval from Texas Natural Resource Conservation Commission
2. Move in an rig up workover rig.
3. Disassemble wellhead and nipple up blowout preventor.
4. Release 5½" injection tubing from packer and pull out of the hole with same.
5. Run electromagnetic casing inspection log from packer depth back to surface.
6. Go in the hole with test seal assembly on workstring and engage packer.
7. Pressure test annulus to 1,000 psig from 30 minutes.
8. Pull out of the hole with test seal assembly - lay down workstring.
9. Go in the hole with redressed seal assembly on new 5½" 20#/ft. N-80 LT&C injection string.
10. Displace annulus with corrosion inhibited brine.
11. Engage packer, nipple down blowout preventor and reassemble wellhead.
12. Pressure test annulus to 1000 psig for 30 minutes.
13. Rig down workover rig.
14. Conduct annulus pressure test and radioactive tracer survey for mechanical integrity test.
15. Place well in non-hazardous service for one week.
16. Perform bottom hole pressure falloff test with non-hazardous effluent.

APPENDIX K

RADIOACTIVE TRACER TOOL LOST IN HOLE



A3HEAD
1 3/8" Cablehead
CCL
SW
GR
MAXIMUM I.D
IS 1.7"
TDET
INJ.
BDET
TEMP.
15"
9"
6'
3'
3'
3'
2'
20'